DATABASE HISTORY

The sections below summarizes revisions to the database between successive uploads to the file portal.

January 18, 2011

Added RI Sediment study data: October 2010 geotech core sampling data.

Added TCRA data from Big Star soil sampling, creating a new study: "Time Critical Removal Action Big Star Soil Sampling".

September 16, 2010

TxDOT Right-Of-Way SVOC results available.

September 14, 2010

Added 2008 and 2009 PCB congener data, creating a new study: "TMDLTCEQ_PCB: Total Maximum Daily Loads for PCBs in the Houston Ship Channel".

Added TCRA study and sediment data: "TMDLTCEQ_PCB: Total Maximum Daily Loads for PCBs in the Houston Ship Channel".

Added RI Sediment study data: "RI_Sed: SJWP RI/FS sediment sampling (2010)", including samples from Cedar Bayou.

Added TxDOT Right-Of-Way study data (only PCDD/Fs and PCBs currently available): "TxDOT_ROW_2010: TxDOT Right-Of-Way Soil Sampling".

April 9, 2010

Added data for sludge and effluent samples, creating a new study: "SldgEff_2006: Sludge and Effluent Data from the Dioxin TMDL Project - Contract #582-6-70860/Work Order #582-6-70860-02 - Quarterly Report 3".

In study "TDSHS_FshTss: Texas Fish Tissue Data from the Texas Department of State Health Services" made the following changes:

- Updated VOC units to ug/kg from mg/kg.
- Updated lab_flags from UJ to J for samples 20000920sbfCLC1 (Toluene, MetaParaXylene, 135TrinitrBenzen), 20000920sbfCLC6 (Benzene, Chloroform,

Ethylbenzene, MetaParaXylene, orthoXylene, Toluene), 20000920sbfCLC15 (orthoXylene, Ethylbenzene).

- Updated undetected flag from true to false for samples 20000920sbfCLC1 (Toluene, MetaParaXylene, 135TrinitrBenzen), 20000920sbfCLC6 (Benzene, Chloroform, Ethylbenzene, MetaParaXylene, orthoXylene, Toluene), 20000920sbfCLC15 (orthoXylene, Ethylbenzene). -Added TotPCBaroclor for sample 19830525rdmTAB13d.

- Added location_id=TDSHS_FishLoc94.

- Revised dioxin/furan data.

- Changed 1,3,5-Trinitrobenzene to 1,3,5-Trimethylbenzene.

In study "TXDOT_2006: Sediment Sampling Data for samples taken during TXDOT's San Jacinto River Bridge (I-10) Dolphin project.", replaced the D samples dioxin results loaded from the EPA geodatabase with the results found in the Attachment B tables (replacing the zero value ND with values) and loaded the SVOCs and Aroclors for the D samples from the Attachment B tables.

Changed the coordinates of the TMDL summer 2005 intensive study (part of TMDLTCEQ) sediment sampling locations to those from the EPA geodatabase instead of the HSC station Excel file.

Updated the TMDLTCEQ dioxin results in surface water. The source files reported incorrect units. The values have been changed to match the units.

Added the 2002 and 2003 PCB congener data to the TMDLTCEQ study.

QA of data entry is complete for all loaded data except the 2002/2003 PCB congener data.

February 12, 2010

Initial upload.

Table Descriptions

Table Name	Description
d_collmeas	Measurements made on sample collections
d_document	Supporting documentation
d_fldqcsamp	Field quality control samples
d_fldqcsplit	Field quality control sample splits
d_labpkg	Lab packages for samples
d_labqcsamp	Laboratory quality control samples
d_labresult	Results from laboratory analysis
d_labsample	Laboratory sample identification
d_location	Geographic coordinates of a sample's location
d_sampchar	Sample characteristics
d_sampcoll	Sample collections
d_sampmain	Sample information for all samples
d_sampmeas	Sample measurements
d_sampsplit	Sample split identifications
d_study	Studies that are contained within the database
d_studylocation	Description of a study's location
e_analmethod	Look up table containing analysis method types
e_analtype	Look up table containing types of analyses
e_analyte	Look up table containing analytes
e_chemclass	Look up table containing chemical classifications
e_collscheme	Look up table containing sample collection schemes
e_composite	Look up table containing types of sample composites
e_coordqual	Look up table containing qualifiers for coordinate values
e_doccat	Look up table containing documentation categories
e_doctype	Look up table containing documentation types
e_fieldgear	Look up table containing a list of possible field gear utilized
e_fieldmeasmethod	Look up table containing field data measurement methods
e_fieldprep	Look up table containing sample field preparation methods
e_lab	Look up table containing laboratory names
e_labextract	Look up table containing laboratory sample extraction methods
e_labmethod	Look up table containing laboratory sample analysis methods
e_labprep	Look up table containing laboratory sample preparation methods
e_leachmethod	Look up table containing laboratory sample leach methods
e_measbasis	Look up table containing sample analysis measurement basis
e_qalevel	Look up table containing levels of quality assurance
e_qctype	Look up table containing types of quality controls
e_riverbank	Look up table containing river proximity descriptions
e_sampcharcode	Look up table containing sample character codes
e_sampcharcodetype	Look up table containing sample character code types
e_sampmaterial	Look up table containing types of sample materials
e_sampmeascode	Look up table containing sample measurement types
e_subsamptype	Look up table containing subtypes of samples
e_taxon	Look up table containing taxonomic
e_unit	Look up table containing measurement units

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
d_collmeas	study_id	x	Text	25	Study identifier	x	d_study
	sampcoll_id	x	Text	25	Sample collection identifier	x	d_sampcoll
	samp_measurement	x	Text	16	Sample measurement	x	e_sampmeascode
	field_meas_method	x	Text	12	Field measurement method	x	e_fieldmeasmethod
	replicate	x	Text	6	Number of replicates produced	x	
	meas_value.value		Double		Measurement value	x	
	units		Text	10	Unit of measurement	x	e_unit
	meas_value.sig_figs		Integer		Significant figures		
	meas_value.std_dev		Double		Standard deviation		
	meas_value.undetected		Boolean		Was the measurement undetected?		
	meas_value.estimated		Boolean		Was the measurement estimated?		
	meas_value.rejected		Boolean		Was the measurement rejected?		
	meas_value.greater_than		Boolean		Was the measurement greater than reporting limit?		
	qa_level		Text	10	Quality assurance level	x	e_qalevel
	reportable		Boolean		Was the measurement reportable?	x	
	principal_doc		Text	12	Document identifier	x	d_document
	validator_flags		Text	8	Validation flags applied to the measurment values		
	comments		Text		General notes and information		
d_document	doc_id	x	Text	12	Document identifier	x	
	pub_year		Integer		Year of publication		
	authors		Text	150	Author(s) of the publication		
	title		Text	250	Title of the publication		
	publisher		Text	150	Publisher of the document		
	pub_date		Date/Time		Date of publication		
	pub_loc		Text	100	Location of publication		
	doc_type		Text	50	Category of documentation		e_doctype
	url		Text	250	Uniform Resource Locator		
	abstract		Text		Abstract text that summarizes the document		
	first_page		Integer		First page number of the document		
	last_page		Integer		Last page number of the document		
	total_pages		Integer		Total number of pages in the document		
	sent_from		Text	150	Person who supplied the document		
	sent_to		Text	150	Person that received the document		
	copyrighted		Boolean		Is the document copyrighted?	x	
	isbn		Text	24	International Standard Book Number		
	issn		Text	9	International Standard Serial Number		
	filename		Text	64	Name of the file containing the document		
	file_loc		Text	128	File network location		
	bates_prefix		Text	8	Bates Technical College document prefix		
	bates_start		Text	10	Bates Technical College document start		
	bates_end		Text	10	Bates Technical College document end		
	int_lib_id		Text	12	Integral library identifier code		

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
	other_lib_id		Text	12	External library identificatioon code		
	doc_cat		Text	24	Documentation category field - unused		e_doccat
	journal_issue		Text	24	Journal issue		
	doc_version		Text	16	Document version		
	hard_copy		Boolean		Hard copy filed?		
	complete_copy		Boolean		Is the available copy complete?		
	integral_product		Boolean		Is this an Integral product?		
	comments		Text		Comments		
d_fldqcsamp	study_id	x	Text	25	Study identifier	x	d_study
	qcsample_id	x	Text	20	Quality control Sample identifier	x	
	qc_type		Text	12	Type of quality control performed	x	e_qctype
	fldqc_group		Text	12	Flield quality control group	x	
	sample_date		Date/Time		Date sample was created		
	srm_id		Text	50	Standard Reference Material identifier code		
	comments		Text		General notes and information		
d_fldqcsplit	study_id	x	Text	25	Study identifier	x	d_study
	fldqc_sno	x	Text	20	Field quality control sample identifier	x	
	qcsample_id		Text	20	Quality control Sample identifier	x	d_fldqcsamp
	comments		Text		General notes and information		
d_labpkg	lab	x	Text	10	Laboratory performing the analysis	x	e_lab
	lab_pkg	x	Text	16	Laboratory package identifier code	x	
	anal_type	x	Text	10	Type of analysis performed	x	e_analtype
	anal_begun		Date/Time		Date the analysis started		
	anal_completed		Date/Time		Date the analysis was completed		
	analyst		Text	32	Person performing the analysis		
	edd_format		Text	40	Description of electronic data deliverable received		
	edd_filename		Text	64	Electronic data deliverable file name		
	qalevel_target		Text	10	Level of quality assurance targeted for the data set		e_qalevel
	qalevel_applied		Text	10	Level of quality assurance applied to data set		e_qalevel
	validated_by		Text	32	Person that validated the data set		
	validation_done		Date/Time		Date when the validation was performed		
	defining_doc		Text	12	Document identifier		d_documentation
	comments		Text		General notes and information		
d_labqcsamp	lab	x	Text	10	Laboratory performing the analysis	x	e_lab
	labqc_samp	x	Text	20	Laboratory quality control sample number	x	
	qc_type		Text	12	Type of quality control performed	x	e_qctype
	comments		Text		General notes and information		
d_labresult	lab	x	Text	10	Laboratory performing the analysis	x	e_lab
	lab_pkg	x	Text	16	Laboratory package identifier	x	
	anal_type	x	Text	10	Type of analysis performed	x	e_analtype
	labsample	x	Text	20	Laboratory sample identifier	x	d_labsample
	material_analyzed	x	Text	20	Material of the sample	x	e_sampmaterial

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
	method_code	x	Text	60	Analyzation method code	x	e_analmethod
	analyte	x	Text	16	Analyte of interest	x	e_analyte
	meas_basis	x	Text	10	Measurement basis	x	e_measbasis
	lab_rep	x	Text	6	Laboratory sample replication number	x	
	meas_value.value		Double		Measured value	x	
	units		Text	10	Units associated with measurement	x	e_unit
	meas_value.sig_figs		Integer		Significant figures		
	meas_value.std_dev		Double		Standard deviation		
	detection_limit		Double		Laboratory process detection limit		
	quantification_limit		Double		Laboratory process quantification limit		
	reporting_limit		Double		Specified reporting limit		
	maximum_limit		Double		Maximum limit for right-censored data		
	original_lab_result		Double		Value originally reported by laboratory		
	lab_conc_qual		Text	1	Laboratory concentration qualifier		
	lab_flags		Text	8	Laboratory validation flags		
	qa_level		Text	10	Level of quality assurance	x	e_qalevel
	meas_value.undetected		Boolean		The sample measurement value was undetected		
	meas_value.estimated		Boolean		The sample measurement value was estimated		
	meas_value.rejected		Boolean		The sample measurement value was rejected		
	meas_value.greater_than		Boolean		The sample measurement value was above reporting limits		
	tic		Boolean		Tentatively identified compounds		
	reportable		Boolean		The sample measurement value is reportable		
	principal_doc		Text	12	Document which initiated the sampling		d_document
	comments		Text		General notes and information		
	validator_flags		Text	8	Validation flags applied to the result values		
	lab_qc_batch		Text	16	Laboratory quality control batch number		d_labqcbatch
	lab_cal_batch		Text	30	Laboratory calibration batch number		
d_labsample	lab	x	Text	10	Laboratory performing the analysis	x	e_lab
	labsample	x	Text	20	Laboratory sample identifier	x	d_labsample
	study_id		Text	25	Study identifier		d_study
	sample_no		Text	20	Sample number		d_sampmain
	bioaccum_sno		Text	20	Biological accumulation sample identifier		d_bioaccumsamp
	fldqc_sno		Text	20	Field quality control sample identifier		d_flldqcsplit
	labqc_samp		Text	20	Laboratory quality control sample number		d_labqcsamp
	treated_sample		Text	20	Sample identifier for treated samples		
	receipt_date		Date/Time		Sample receipt date		
	coc_id		Text	12	Chain of Custody form identifier		d_coc
d_location	location_id	x	Text	60	Location identifier	x	
	description		Text	150	Description of the location		
	loc_type		Text	15	Location type		e_loctype
	defining_doc		Text	12	Supporting documentation about the location	x	d_document
	loc_geom		Geometry		Location geometry		

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
	elevation		Single		Distance above mean sea level		
	elev_unit		Text	10	Units associated with elevation measurement		e_unit
	huc		Text	10	Hydrologic unit code		
	river_mile		Single		Associated river mile		
	river_bank		Text	8	General location description compared to the river bank		e_riverbank
	coord_sys		Text	30	Coordinate system		
	coord_qual		Text	10	Qualifier code for location coordinates		e_coordqual
	comments		Text		Comments		
d_sampchar	study_id	x	Text	25	Study identifier	x	d_study
	sampcoll_id	x	Text	20	Sample collection identifier	x	d_sampcoll
	sampchar_type	x	Text	12	Sample characteristic type	x	e_sampcharcode
	sampchar	x	Text	16	Sample characteristic	x	
	comments		Text		General notes and information		
d_sampcoll	study_id	x	Text	25	Study identifier	x	d_study
	sampcoll_id	x	Text	20	Sample collection identifier	x	
	study_loc_id		Text	60	Study location identifier	x	d_studylocation
	sample_date		Date/Time		Date sample was collected		
	sample_material		Text	20	Material of the sample	x	e_samplematerial
	study_element		Text	16	Study element		
	composite_type		Text	16	Type description of the composite	x	e_composite
	composite_period		Single		The time, area, or distance over which the composite was collected		
	composite_period_units		Text	8	Unit measure for composite period		e_unit
	composite_start_date		Date/Time		Starting time for compositing		
	composite_count		Integer		Number of sub-composites collected to make up the composite sample		
	samp_loc_points		Geometry		Sample geographic location		
	fldqc_group		Text	12	Field quality control group		
	srm_id		Text	32	Standard Reference Material name or identifier		
	coll_gear		Text	12	Sample collection gear utilized		e_fieldgear
	coll_sop		Text	12	Sample collection standard operating procedures		d_document
	coll_scheme		Text	10	Sample collection scheme		e_collscheme
	taxon_code		Text	16	Taxonomic category code		e_taxon
	coll_upper_depth		Single		Sample collection upper depth		
	coll_lower_depth		Single		Sample collection lower depth		
	coll_depth_units		Text	10	Sample collection depth units		e_unit
	coll_success		Text	10	Collection success		
	water_depth		Single		Sample collection depth for water		
	water_depth_units		Text	10	Sample collection depth for water units		e_unit
	flood_stage		Text	10	Description of water level when sample was collected		
	water_gauge		Single		Water level gauge value		
	water_gauge_units		Text	10	Water level gauge value units		e_unit

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
	weather		Text	10	Weather at the time the sample was collected		
	tide_stage		Text	10	Tide variation stage when sample was collected		
	tide_height		Single		Tide height when sample collected		
	tide_height_units		Text	10	Tide height units when sample collected		e_unit
	sampler		Text	32	Person performing the sampling		
	comments		Text		General notes and information		
d_sampmain	study_id	x	Text	25	Study identifier	x	d_study
	sampcoll_id		Text	20	Sample collection identifier	x	d_sampcoll
	sample_id	x	Text	20	Sample identifier	x	
	subsamp_type		Text	10	Type of subsample	x	e_subsamptype
	sample_material		Text	20	Material of the sample	x	e_samplematerial
	description		Text	255	Description of the sample		
	sample_treatment		Text	20	Treatment applied to the sample		e_samptreat
	original_id		Text	32	Identifier assigned by the original investigator if different from the sample_id		
	defining_doc		Text	12	Document identifier		d_document
	fieldqc_batch		Text	12	Field quality control batch		
	upper_depth		Single		Upper sampling depth		
	lower_depth		Single		Lower sampling depth		
	depth_units		Text	10	Unit measure of depth		e_unit
	taxon		Text	16	Taxonomic category		e_taxon
	field_prep_method		Text	10	Field preparation method		e_fieldprep
d_sampmeas	study_id	x	Text	25	Study identifier	x	d_study
	sample_id	x	Text	25	Sample identifier	x	d_sampmain
	samp_measurement	x	Text	16	Sample measurement	x	e_sampmeascode
	field_meas_method	x	Text	12	Field measurement method	x	e_fieldmeasmethod
	replicate	x	Text	6	Number of replicates produced	x	
	meas_value.value		Double		Measurement value	x	
	units		Text	10	Unit of measurement	x	e_unit
	meas_value.sig_figs		Integer		Significant figures		
	meas_value.std_dev		Double		Standard deviation		
	meas_value.undetected		Boolean		Was the measurement undetected?		
	meas_value.estimated		Boolean		Was the measurement estimated?		
	meas_value.rejected		Boolean		Was the measurement rejected?		
	meas_value.greater_than		Boolean		Was the measurement greater than reporting limit?		
	qa_level		Text	10	Quality assurance level	x	e_qalevel
	reportable		Boolean		Was the measurement reportable?	x	
	principal_doc		Text	12	Document identifier	x	d_document
	validator_flags		Text	8	Validation flags applied to the measurment values		
	comments		Text		General notes and information		
d_sampsplit	study_id	x	Text	25	Study identifier	x	d_study
	sample_no	x	Text	20	Sample number	x	

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
	sample_id		Text	20	Sample identifier	x	d_sampmain
	bottle_count		Integer		Number of containers filled		
	comments		Text		General notes and information		
d_study	study_id	x	Text	25	Study identifier	x	
	full_name		Text	125	Complete name of the study		
	sponsor		Text	80	Sponsor of the study		
	contact		Text	80	Contact person regarding the study		
	primary_doc		Text	12	Document identifier		d_document
	qa_level		Text	10	Target quality assurance level		e_qalevel
	qa_doc		Text	12	Document identifier for QA report for the study		
	source_qa_level		Text	10	QA level assigned by the original data source		e_qalevel
	comments		Text		General notes and information		
	qa_comments		Text		Notes about data quality assessments		
	primary_doc		Text	12	Document identifier		d_document
d_studylocation	study_id	x	Text	25	Study identifier	x	d_study
	study_loc_id	x	Text	60	Study location identifier	x	
	location_id		Text	60	Location identifier		d_location
	description		Text		Description of the location		
	reference_loc		Boolean		Is there a reference for this location		
	defining_doc		Text	12	Document identifier of document that defines the location	x	d_document
	loc_method		Text	8	Method which the location geometry was identified	x	e_locmethod
	comments		Text		General notes and information		
	site		Text	40	Identifier for a particular area of concern		
	elevation		Single		Distance above mean sea level		
	elev_unit		Text	10	Units associated with elevation measurement		e_unit
e_analmethod	method_code	x	Text	15	Analyzation method code	x	
	description		Text		Description of the analyzation method	x	
	lab_leach_method		Text	10	Laboratory leach method		e_leachmethod
	lab_prep_method		Text	10	Laboratory preparation method		e_labprep
	lab_extraction_method		Text	10	Laboratory extraction method		e_labextract
	lab_anal_method		Text	10	Laboratory analysis method		e_labmethod
e_analtype	anal_type	x	Text	10	Analysis type code	x	
	description		Text		Description of analysis	x	
e_analyte	analyte	x	Text	16	Analyte of interest code	x	
	full_name		Text	120	Full name of the analyte	x	
	chem_class		Text	10	Chemical classification		e_chemclass
	aliases		Text		Other names for the analyte		
	cas_rn		Text	32	CAS number		
e_chemclass	chem_class	x	Text	10	Chemical classification code	x	
	description		Text		Chemical classification description		
e_collscheme	coll_scheme	x	Text	10	Sample collection scheme code	x	
	description		Text		Sample collection scheme description	x	

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
e_composite	composite_type	x	Text	16	Composite type code	x	
	description		Text		Composite type description		
e_coordqual	coord_qual	x	Text	10	Coordinate system qualifier code	x	
	description		Text	150	Coordinate system qualifier description	x	
e_doccat	doc_cat	x	Text	24	Document category code	x	
	description		Text		Document category description	x	
e_doctype	doc_type	x	Text	50	Document type code	x	
	description		Text		Document type description		
e_fieldgear	gear	x	Text	12	Field gear code	x	
	description		Text		Field gear description	x	
e_fieldmeasmethod	field_meas_method	x	Text	12	Field measurement method code	x	
	description		Text		Field measurement method description		
e_fieldprep	field_prep_method	x	Text	10	Field preparation method code	x	
	description		Text		Field preparation method description	x	
e_lab	lab	x	Text	10	Laboratory code	x	
	lab_name		Text		Full name of the laboratory	x	
	street		Text		Street address		
	city		Text		City		
	state		Text		State		
	province		Text	20	Province		
	country		Text	12	Country		
	postal_code		Text	10	Postal code		
	contact		Text		Contact person		
e_labextract	lab_extraction_method	x	Text	10	Laboratory extraction method code	x	
	description		Text		Laboratory extraction method description	x	
e_labmethod	lab_anal_method	x	Text	10	Laboratory analysis method code	x	
	description		Text		Laboratory analysis method description	x	
e_labprep	lab_prep_method	x	Text	10	Laboratory preparation method code	x	
	description		Text		Laboratory preparation method description	x	
e_leachmethod	lab_leach_method	x	Text	10	Laboratory leach method code	x	
	description		Text		Laboratory leach method description	x	
e_measbasis	meas_basis	x	Text	10	Measurement basis code	x	
	description		Text		Measurement basis description	x	
e_qalevel	qa_level	x	Text	10	Quality assurance level code	x	
	description		Text		Quality assurance level description	x	
e_qctype	qc_type	x	Text	12	Quality control code	x	
	description		Text		Quality control description	x	
e_riverbank	river_bank	x	Text	8	River bank location code	x	
	description		Text		River bank location description	x	
e_sampcharcode	sampchar_type	x	Text	12	Sample characteristic type code	x	e_sampcharcodetype
	sampchar		Text	16	Sample characteristic	x	
	description		Text		Sample characteristic description	x	

IDB Data Dictionary

Table Name	Column	PK	Data Type	Length Limit	Description	Required	Valid Values
e_sampcharcodetype	sampchar_type	x	Text	12	Sample characteristic code type code	x	
	description		Text		Sample characteristic code type description	x	
e_sampmaterial	sample_material	x	Text	20	Sample material code	x	
	description		Text		Sample material description	x	
	matrix		Text	1	Sample material matrix	x	e_material
e_sampmeascode	samp_measurement	x	Text	16	Sample measurement code	x	
	description		Text		Sample measurement description	x	
e_subsamptype	subsamp_type	x	Text	10	Sub-sample type	x	
	description		Text		Sub-sample description		
e_taxon	taxon_code	x	Text	16	Taxonomic category code	x	
	kingdom		Text		Kingdom		
	phylum		Text		Phylum		
	tax_class		Text		Class		
	subclass		Text		Subclass		
	superorder		Text		Superorder		
	tax_order		Text		Order		
	suborder		Text		Suborder		
	superfamily		Text		Super family		
	family		Text		Family		
	subfamily		Text		Subfamily		
	genus		Text		Genus		
	species		Text		Species		
	subspecies		Text		Subspecies		
	common_name		Text		Common Name		
e_unit	unit	x	Text	10	Unit code	x	
	description		Text		Unit description		
	dimension		Text	5	Unit measurement dimension	x	e_dimension
	as_html		Text	24	The displayable representation, as HTML		
	addend1		Single		Field used to convert units of measure	x	
	factor		Single		Unit conversion factor	x	
	addend2		Single		Field used to convert units of measure	x	
	display		Text	10	The displayable representation	x	